

THE  
GREAT ENGLISH-INDIAN  
DICTIONARY  
CHEMISTRY

PROF. DR. RAGHU VIRA

ॐ

॥ आङ्गल-भारतीय महाकोष ॥

आङ्गल-भारतीय महाकोष

ஆங்கில-பாரதி ய  
மஹாகோஷ

ఆంగల-భారతీయ మహాకోష

आङ्गल-भारतीय महाकोष

ఆంగల-భారతీయ మహాకోష

आङ्गल-भारतीय

महकोष

आङ्गल-भारतीय

महकोष

आङ्गल-भारतीय महाकोष

आङ्गल-भारतीय महाकोष

सरस्वती-विहार-ग्रन्थाः

१५

पञ्चनद-मध्यार्वावर्त-नेपाल-बंगोत्कल-गुर्जर-महाराष्ट्र-कर्णाटक-त्रैलिंग-द्रमिल-केरल-सिंहल-प्रभृतिदेशानां  
भाषासूपयुज्यमानं निखिल-विज्ञानानाम् एकमात्रं परिपूर्णं शब्दभाण्डागारम्

आचार्यरघुवीरोपज्ञातः

## आङ्गल-भारतीयो महाकोषः

तदादिखण्डे

रसायन-शास्त्रम्

तस्यायं प्रथमो भागः

रसायन-तत्त्वानि तत्संयोगाः, तत्संबन्धीनि क्रियापदानि खनिजानि शैलाश्च

तथा

रासायनिक-पदप्रतीकानि संक्षिप्तरूपाणि प्रत्ययादयश्च ॥

विक्रमाब्दाः २००१

प्रकाशयिता—कन्नपुरस्थः सरस्वती-विहारः ॥

एष कोषः सरस्वती-विहार आर्यभारत्य-अभिधे  
मुद्रणगृहे मुद्रितः ॥

FOR USE IN THE VARIOUS ARYAN AND DRAVIDIAN LANGUAGES OF INDIA AND CEYLON,  
*namely,*  
 BENGALI, GUJARATI, HINDI, KANNADA, MALAYALAM, MARATHI, NEPALI, ORIYA, PUNJABI,  
 SINGHALESE, TAMIL, TELUGU, AND ALLIED LANGUAGES.

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## प्राक्कथन

यह एक सर्वमान्य नियम है कि किसी भी प्रगतिशील देश की भाषा तभी उन्नत हो सकती है जब उसमें नए नए आविष्कारों से सम्बद्ध शब्दों का निर्माण होता रहे। ये आविष्कार संसार के किसी भी देश में क्यों न हुए हों, इनका वर्णन तथा वर्णन करने की सामग्री, शब्द, जब तक हमारे पास न होंगे तब तक उन आविष्कारों को हम अपना नहीं बना सकते। मनुष्य को अपने भावों, अनुभवों, साहित्य और कलाओं तथा वैज्ञानिक आविष्कारों को प्रकट करने के लिए शब्दों की अपेक्षा रहती है। किसी भी दिशा में पांव बढ़ाओ उसी दिशा में शब्दनिर्माण की अपेक्षा है। प्राचीन समय में जब जब हमने नई विद्याओं को जन्म दिया तभी नए शब्दों का निर्माण हुआ। शब्दों के बिना मनुष्य गूंगा और अन्धा हो जाता है। जब से भारतवर्ष में नई नई विद्याओं का बनना बन्द हुआ तब से शब्दनिर्माण भी रह गया ॥

संसार में आगे बढ़ने वाले देशों की भाषाएं भी आगे बढ़ी हुई हैं। हम दौड़ में पीछे रह गए हैं। उनके साथ मिलने के लिए हम को उनके बराबर शब्द बनाने पड़ेंगे। नए शब्द बनाने में घबराने की कोई बात नहीं। हमारे शब्द पाश्चात्य भाषाओं की अपेक्षा अधिक सुन्दर और स्पष्ट हैं। जब हम दौड़ में दूसरे देशों के साथ मिल जाएंगे तब हम भी प्रतिदिन उनके समान नवीन से नवीन आविष्कार कर सकेंगे। साथ मिलने, आविष्कार करने तथा आगे बढ़ने में हमारे अपने शब्द परम सहायक होंगे ॥

अभी तक शब्दकोष निर्माण की ओर ध्यान क्यों नहीं गया यह भी विचारणीय विषय है। मेरे मत से इसका प्रधान कारण तो यह है कि पिछले आठ सौ वर्षों से विज्ञान में उन्नति करने की हमारी प्रवृत्ति मन्द हो गई। अपनी वस्तु को अपनाने की हमारी भावना नष्ट हो गई। हमें दूसरों की संस्कृति प्रिय ज्ञात होने लगी। दूसरों की वस्तु केवल सुलभता के कारण हम ग्रहण करने लगे और यह ध्यान नहीं दिया कि इसमें हमारी अवनति का मार्ग विवृत होगा। यह परमेश्वर की कृपा है कि अब हमारा ध्यान इस ओर गया है। अब यदि देश ने कोषनिर्माण के कार्य में सामूहिक रूप से सहयोग नहीं दिया तो पुनः हमारा उन्नति का मार्ग कुछ समय के लिए अवरुद्ध रहेगा। शब्दकोष का निर्माण तथा अपेक्षित पुस्तकों का लिखा जाना इतना आवश्यक है कि उसके सम्बन्ध में लिखना सूर्य को दीपक दिखलाना है। प्रारम्भ में कोषनिर्माण रूक्ष कार्य लगता है। कोष ऐसी वस्तु नहीं जिसको उपन्यास के समान प्रत्येक शिक्षित व्यक्ति चारपाई पर लेटा हुआ पढ़ सके। तथापि पुस्तक रचयिता, राज्याधिकारी, अध्येता और अध्यापक, अन्वेषणकर्ता तथा सभी विषयों के विद्वान् और पुस्तकालयों के लिए कोष सर्वोत्तम उपकरण है ॥

कोष का कार्य शताब्दियों तक राज्याश्रित रहा है। किन्तु आज जहां राज्य सहायता की परम आवश्यकता है वहां कार्य करने वालों को प्रबल लगन की भावना से अथवा अपने आप को संन्यास आश्रम में समझ कर कार्य करना चाहिए ॥

प्रस्तुत आंग्ल-भारतीय महाकोष इसी प्रकार का एक बृहत् प्रयास है। इसमें मूल आंग्ल शब्दों को लेकर उनके ऐसे पर्यायवाची शब्द दिए गए हैं जो भारतवर्ष की समस्त संस्कृतमातृक भाषाओं में प्रयोग किए जा सकें। बंगाली, कन्नड, गुजराती, हिन्दी, मलयालम, मराठी, नेपाली, उड़िया, पंजाबी, तामिल, तेलुगु और लंकाद्वीप में सिंहली—इन सभी भाषाओं का शब्दभण्डार इस कोष से भरपूर बनेगा। पूर्ण होने पर यह कोष भारतीय इतिहास में अद्वितीय होगा और नए युग की आधारशिला बनेगा। संसार की अनेक भाषाओं की जननी संस्कृत का सहारा लेने से ही यह चमत्कार सम्भव हो सका है ॥

सरस्वती-विहार, लाहौर और उसके प्रधान आचार्य श्री डॉक्टर रघुवीर जी को इस कार्य के लिए मैं धन्यवाद देता हूं और मुझे पूर्ण आशा है कि मातृभाषा के प्रेमी तथा प्रोत्साहक इनके इस कार्य को सफल बनाने के लिए उदारहस्त से इनकी सहायता करेंगे ॥

मालोजीराव नृसिंहराव शितोले

## FOREWORD

It is a privilege to be associated, even though only to the extent of writing the foreword, with the Great English-Indian Dictionary edited by Dr. Raghu Vira. The work is a colossal one, both in its conception and execution. He has got together a band of enthusiasts to cooperate with him in the work and has succeeded in presenting a monumental work giving equivalents of English technical terms in the major Indian languages—Bengali, Canarese, Gujarati, Hindi, Malayalam, Marathi, Nepali, Oriya, Tamil, Telugu, Singhalese and other languages derived from Sanskrit.

Educationists all over India have agreed that the major obstacle for the spread of the knowledge of modern sciences in the country is the absence of appropriate terminology of technical terms in the regional vernaculars. The importance of, and the urgency for, introducing vernacular as the medium of instruction in non-language subjects in the schools and colleges of India has been repeatedly stressed. Although progress has been made in some areas, notably in Hyderabad, the pace of progress is too slow to have any perceptible effect. Text books in science subjects have to be translated in hundreds into vernaculars and teachers of science should be encouraged to write new text books. Until and unless our effort is greatly accelerated to meet the demands, the results are bound to be disappointing. The Great English-Indian Dictionary is an instrument of education which will be of immense assistance in the spread of scientific knowledge in the country. Students and teachers of present and future generations will have cause to feel profoundly grateful to the editor of this prodigious compilation.

Orthodox opinion may not endorse the selection of all equivalents; there may be differences of opinion on the derivation of complex words. In a country where there are more critics than authors, this work will be scanned in the searchlight of criticism. It may be stated at once, that the adoption of one or two out of a hundred possible equivalents, pronunciation, precision, flexibility (adaptability for compound formation) and even phonetic (pleasing to the ear) considerations become relevant. Orthodox rules of grammar alone do not determine the choice. Usage perhaps is a compelling consideration in the selection of an equivalent and it should be remembered that equivalents for many technical terms have already been compiled in several vernaculars and are in use. To evolve equivalents *de novo* for each and every term, is in effect an attempt to replace the terms which have already gained currency, and to delay progress.

The first volume of the Great English-Indian Dictionary covers the field of Inorganic Chemistry. The following volume will deal with the terminology of Organic Chemistry, Biochemistry and Pharmacy. A special volume has been projected for Physical Chemistry. The Dictionary will comprise ultimately all sciences. A critical study of the ancient Indian literature and much painstaking effort lie latent in this work. The zeal of the editor for the spread of technical education is excelled only by his scholarship. The proposal to start training centres for popularising the terms is a necessary sequel to the evolution of the terminology, and should be warmly welcomed. The publication of the Dictionary, and the educational propaganda that should follow, involve the expenditure of large sums of money. It is hoped that the enlightened governments of States and Provinces, business magnates and philanthropists would generously support this great venture, so ably initiated by the distinguished editor.

Delhi,

8th August, 1944.

S. S. BHATNAGAR



सर्वं वा इदं नाम च रूपं च ॥  
देवो रूपाणि चक्रे वयं नामानि कृष्मसि ॥

The Dictionary is designed to contain Indian equivalents for every word of the English language, literary, technical and semi-technical, covering about six hundred special branches of knowledge. To name only a few: accounts, aeronautics, agriculture, animal husbandry, anatomy, angling, anthropology, architecture, art, astronomy, astrophysics, athletics and sports, aviation, bacteriology, banking, bio-chemistry, biology, botany, brewing, cartography, ceramics, chemistry, chess, commerce and finance, craniometry, dancing, dentistry, dramaturgy, economics, education, engineering, forestry, gambling, gems and jewelry, geography, geology, history, horology, horticulture, hunting and field sports, insurance, law, logic, machinery and tools, mathematics, medicine, metallurgy, meteorology, mining and ore-dressing, music, nautical and naval terms, newspapers, numismatics, optics, painting, paleontology, paper-making, petrography, petrology, pharmacy, philately, philology and linguistics, philosophy, photography and motion pictures, physics, physiology, politics, printing and engraving, psychology and psychiatry, radio, railways, sculpture, shipbuilding, sociology, surgery, textiles, transportation (air, land and marine), veterinary science, warfare, zoology.

The English Oxford Dictionary in thirteen volumes and Webster's New International Dictionary of the English Language in two volumes serve as the main sources for English vocabulary. For every special branch of knowledge their vocabulary is supplemented by drawing upon technical dictionaries.

The Indian words are derived from Sanskrit roots and stems. The words are such as are usable in the diverse literary languages of India and Ceylon, whether Aryan or Dravidian—Panjabi, Hindi, Nepali, Bengali, Oriya, Gujarati, Marathi, Telugu, Tamil, Kannada, Malayalam, Singhalese and allied languages.

Since times immemorial, Sanskrit has been the fountain-head from which all languages of India have drawn their learned and technical vocabulary, from elementary grammar and arithmetic up to logic and metaphysics, embracing the entire sphere of human thought and activity, such as aesthetics, rhetorics, drama, dance, music, architecture, painting, sculpture, history, political science, administration, law, astrology, astronomy, medicine, magic, ritual, atheism, archery and warfare.

Every word appears in four scripts—Devanagari and Bengali for Northern India, and Tamil and Kannada for Southern India.

\* \* \* \* \*

India has a long and rich past. She has contributed a good deal to the world's sum total of knowledge. Her contribution has not been duly recognised. It is not even fully known. Much of it has to be discovered.

Our ancestors had made notable advances in alchemy, pharmacy and metallurgy. We can be still proud of them. We would like to narrate them here, but their variety and volume forbid our doing so. There is much that has never been brought to light before. It is intended to publish a separate volume incorporating our researches in this direction.

While studying English chemical terminology we have found hundreds of Sanskrit words in Western guise. Anil (aniline) is our नील. So is lilac. Corundum is कुरुविन्द. Lemon and orange are निम्बु and नारङ्ग. Kermes and crimson are from कृमि. Camphor, pepper and costus are respectively कर्पूर, पिप्पली and कुष्ठ. Sapphire, opal and emerald are शनिप्रिय, उपल and मरकत (Prakrit मरकत, whence Greek *smaragdos*, *maragdos*). Talc (Mid Latin *talcum*) is from तालक. अगरु or अगुरु has given to the English language agalloch (Greek *agallochon*), agalwood, agilawood, aguilawood, eaglewood (the last is an interesting case of anglicisation). Turpeth and turbith are both त्रिवृता (through Persian *tirbid*). Carbasus is कर्पास, which is better preserved in Greek *karpasos*. Sulphur is शुल्बारि (see Introduction p. 2, element no. 8). It is the articles, and not just names, which India gave as gifts to the rest of the world. Their number is legion, and their history has yet to be written.

Let us take some more words, which are interesting because they are so common in scientific terminology and because they are so apparently our own. Para परा, epi एपि, ortho ऊर्ध्व, hypo (here and in the following words *y* is originally *u*) उप, semi (hemi) सामि, di (bi) द्वि, dis (bis) द्विस, peri परि, poly पुर, eos (eosin) उषस्, erythros (erythrine) रुधिर, dys दुस्, etc., etc. As our Dictionary advances we shall be coming across more and more of such words, and we shall be obliged to enlighten the Indian scientists as to the exact nature and extent of the Sanskrit element in European (and not only in English) scientific nomenclature.

Our technical language is not separated by any distance from the general literary language. The common Sanskrit roots are not more than 600, and most of these are known, in one form or the other, to an Indian schoolboy of fifteen years of age who has done his Hindi or Kannada, Bengali or Malayalam, or any other Aryan or Dravidian language, for 10 years. These 600 roots also lie at the bottom of the most complicated and remote terms of science. Hence our boys and girls will grasp quicker and retain more than in any country of the West, because nowhere else do the two languages, those of literature and science, come so near to each other.

Our terminology is a potent means of carrying forward the stream of knowledge which our ancestors had started, but which had got choked during the past few centuries. We are incorporating all that is useful in the old vocabulary. Thus we are making science our own. No longer shall it be foreign.

In the course of translating English words, certain confusions are discovered. These are not reproduced in our words. For example, the suffix *-ite* is used both in chemistry and mineralogy, designating a salt in the one and a mineral or rock in the other. The Indian suffix is different in each case, *-त* in chemistry and *-रस* in mineralogy. See chlorite (a salt of chlorous acid) col. 58, and chlorite (a monoclinic mineral) col. 255. In naming colours we have brought order out of chaos (see Introduction, pp. 12-15).

The Dictionary will appear in several parts. To every major science will be allotted separate volumes. The present volume contains names of elements, their symbols, and derivatives and compounds beginning with the names of elements. It also contains some of the well-known prefixes, suffixes and abbreviations. With the help of this material, it is possible to reproduce almost all chemical formulae. Verbs derived from the names of elements have been registered in Appendix I. At times different words have been given as translations of the different senses of a verb. One word covering all the different senses is usually provided. Derivatives of these verbs are also translated. Ores, rocks and minerals beginning with the names of elements form yet another appendix. An index at the end records such words or their combining forms as have appeared in the body of the vocabulary but not in due alphabetic order. The Periodic Table is also covered by the index. At the bottom of every page chemical suffixes and genders are alternately placed for ready reference. Genders of common words or words with common endings are left unnoticed. It is only for new suffixes that genders have been defined. As genders are not distinguished in South Indian languages, so they will be found in the two North Indian scripts only. In the case of adjectives the feminine form, ending in long ऋ or ॠ, is put in parentheses after Devanagari and Bengali scripts. For South India this distinction is not needed.

Obsolete English words have been left out.

Some English words appear in dictionaries and chemical literature with more than one spelling. We have generally noticed only one spelling, sometimes the simpler and sometimes the more prevalent form. In words of classical origin one frequently meets with *ae*. Following the American practice we have retained *e*, e. g., *cesium*, *hemoglobin* and *-emia* in place of *caesium*, *haemo-globin* and *-aemia*. On the other hand, *sulphur* is printed with *ph* and never with *f*. Similarly *aluminium* and not *aluminum*. In suffixes two spellings are very common, e. g., *-ide*, *-id*; *-ine*, *-in*; *-one*, *-on*; *-ile*, *-il*. In selecting one spelling as against the other we have kept in view the best usage both in England and America. Each word has been considered individually. In the case of our translations *-id*, *-il*, *-on*, *-um* have not been distinguished from *-ide*, *-ile*, *-one*, *-ium* respectively. On the other hand, *-an*, *-ane*; *-ein*, *-eine*; *-in*, *-ine*; *-ol*, *-ole* have been provided for with distinct translations. Of course, the doublets have been kept close to each other in the translations also.

Greatest care and thought has been bestowed in the translation of element names and suffixes. For elements we consulted French, German, Russian, Italian, Spanish from among the Western languages and Chinese and Japanese as the best representatives of the Eastern languages. It affords better insight into the art of word-formation. It supplies new evidence in favour of the Indian system as being more uniform and expressive. For suffixes we have followed the historical method of tracing them back to their very origins. Examples:

Suffix *-INE* is variously used. It is used for forming both adjectives and nouns. It represents Latin *-inus*, *-ina*, *-inum*. In English it is taken from French where *-in* is masculine and *-ine* is feminine. In English it is usually represented by *-ine*, only occasionally by *-in*. *-ine* when forming nouns represents French *-ine* which is derived from Latin *-ina* which again is from Greek *-ine*, forming feminine titles, as in Greek *eroine*, Latin *heroina*, French *heroine*, English *heroine*. In Latin *-ina* formed feminine abstracts from verbs as well as substantives from other sources. In chemistry *-ine* was first used unsystematically in forming names of extractive principles and chemical derivatives of various kinds; also, in English names given early in the nineteenth century to the four elements *chlorine*, *fluorine*, *iodine*, *bromine* (in French *chlore*, *fluor*, *iode*, *brome*). In all these, but especially in the names of extractive principles the ending *-ine* was by some reduced to *-in*. In recent systematic nomenclature the two forms have been differentiated.

*-IN* is a modification of the chemical suffix *-ine*. It was introduced into systematic nomenclature by Hofmann in about 1860, used systematically in Watts' *A Dictionary of Chemistry* in 1866 and subsequently adopted by the Chemical Society for the names of neutral substances, such as glycerides, glucosides, bitter principles, colouring matters and proteids, which are thus distinguished from the names of alkaloids and basic substances in *-ine*. Examples, *albumin*, *casein*, *fibrin*, *globulin*, *mucin*, *myosin*, *pepsin*; *cerebrin*, *chitin*, *chondrin*, *gelatin*, *lecithin*; *acetin*, *alizarin*, *aloin*, *arbutin*, *crotonin*, *curcumin*, *dextrin*, *haematin*, *indigotin*, *inulin*, *isatin*, *palmitin*, *purpurin*, *salicin*, *ulmin*, *vanillin*. Some of these were formerly spelt with *-ine* and in that spelling had passed into popular use before the rectification of nomenclature, esp. *dextrine*, *gelatine*,

*margarine*, which are still commonly so spelt in non-scientific use. Cf. "Basic substances should invariably be indicated by names ending in *-ine*, as *aniline*, instead of *anilin*, the termination *-in* being restricted to certain neutral compounds, viz. glycerides, glucosides, bitter principles, and proteids, such as *palmitin*, *amygdalin*, *albumin*". *Chemical Society, Instructions to Abstractors*, sec. 16 (A. D. 1881). Some chemists, however, prefer *-in* for basic substances also.

We have translated the chemical suffix *-ine* by the feminine suffix -ஈ || -ஐ || -ஊ || -஋, and have distinguished it from *-in*, which has been translated by -ஊ || -ஐ || -ஊ || -஋; the two remaining close to each other though still different.

In chemistry *-IUM* has been used to form the names of new metallic elements. Latin names of metals were in *-um*, e. g., *aurum*, *argentum*, *ferrum*; the names *sodium*, *potassium* and *magnesium* derived from *soda*, *potassa* or *potash* and *magnesia*, were given by Davy in 1807, with the derivative form *-ium*; and although some of the later metals have received names in *-um*, the general form is in *-ium*, as in *cadmium*, *lithium*, *palladium*, *titanium*; in conformity with which *aluminum* has been altered to *aluminium*. So hydrogen (उद्जन || उद्जन || உத்யுத || ஸத்யுத), when theoretically regarded as a metal, has been called *hydrogenium* (उद्जनानु || उद्जनानु || உத்யுதானு || ஸத்யுதானு).

In India the common word for metal is चातु || चातु || சாது || சாது. It has been abridged to -आतु || -आतु || -आतु || -आतु and has been used to form the names of new metallic elements.

A word about the observance of rules of ancient grammar. At the very outset it should be borne in mind that no grammar, not even the excellent work of Panini, covers all the existing formations and usages. Now, when the language is expanding a hundred-fold, serving purposes never thought of before, it becomes imperative to modify and supplement the ancient rules. No change is, however, initiated without prolonged consideration of its merits. Such changes are few, and they are simple to enunciate. Chemistry has its own set of grammatical परिभाषा. Though new, they are in spirit wholly Paninean. To aid understanding and to keep unimpaired the exhaustive character of the system of Panini, Katyayana and Patanjali, वाक्तिक embracing the new terminology will be appended to the completed Dictionary.

It would not be out of place to mention that in the past efforts had been made in every province of India to provide technical terms. The authors were concerned with the elementary stages of a few school and college subjects. No one language coordinated with another, so there was awkward and unnecessary diversity. The results were laudable in their days, but they were meagre and poor. They lacked flexibility and growth. Their authors had not even analysed English words into their formative elements. They were no philologues. They did not know that words do not stand alone, that they have their relatives and associates, parents and derivatives, and that it is best to tackle many of them together.\* Instinctively and unerringly, however, they all drew on Sanskrit, the perpetual spring supplying immortal life to India's millions. Before starting the Dictionary we had collected whatever terms had been published in any part of India. Following the dictum of Sir Bhatnagar we have retained from among them what is serviceable, what can conform to the complex system which controls and guides every item in the vast terminology of science that is being presented in this Dictionary.

It is a most pleasant duty to put on record our thanks to the many friends who made it possible to start the publication of the Dictionary. Sir N. Gopaldaswami Ayyangar, as the Prime Minister of Jammu and Kashmir State, got us the first grant from His Highness' Government. He is our पथिकृत्, the maker of the way. To Col. Raj Rajendra M. N. Shitole we are indebted for giving us the पायेय, a princely donation, which helped us in carrying the present volume to a considerable distance. He has also favoured us with a प्राक्कथन. To Sir S. S. Bhatnagar we are grateful for contributing the valuable Foreword. He cherishes a particular fondness for the Dictionary. Our editors have always been ready to help in whatever manner their help has been sought. Our staff is constituted of young and enthusiastic men who are conscious that they are serving a noble ideal. Lastly, all glory to men who prefer to remain unnamed.

RAGHU VIRA

\* We have also carefully examined the Urdu work of the Hyderabad Government. It suffers from the same defects. But as Urdu derives its technical vocabulary from Arabia and not from India, it is outside our orbit.

# INTRODUCTION

## GENERAL PRINCIPLES

**1 One word conveys only one primary meaning.**

For every primary meaning there is a separate word.

**2 Words are अन्वर्थ significant. They lead you in the direction in which the thing or idea denoted lies; they point to some salient feature. They may even be founded on the basis of an exclusive characteristic.**

**3 Simple English words are translated by simple words and not by compounds or phrases.**

In chemical terminology the translation proceeds normally through the channel of minute analysis of the formative elements of a word. The prefix is translated by a prefix, the base or root by a base or root, the suffix by a suffix, the assemblage presenting an organic whole.

**4 Phonetically every word is designed to fit in with the Indian genius. Harsh sounds and awkward consonant combinations are avoided.**

**5 The length of a simple, uncompounded word is kept strictly within bounds. Two and three syllables form the norm; four is the limit.**

The limit is crossed only in unavoidable cases, such as ancient words and derivatives. Scientific colour names, incorporating within themselves the complete definition in terms of hue, saturation and brilliance, are essentially formulas and not simple words.

**6 Wherever needed, a word is allowed a syncopated form, one or more abbreviations and a symbol, and these in accordance with the established usage, clear as well as easy of grasp and application.**

Provision is thus made for all the required combinations which a highly developed science like chemistry demands—combinations of words in their full or abridged forms together with suffixes, prefixes, infixes, numerals and various symbols.

**7 No word is considered and translated individually. It is taken along with its derivatives (nouns, verbs, adjectives), related words and word compounds that may be said to form a linguistic group.**

Thus the present volume of 264 columns consists of 92 groups. Of course there are groups within groups.

**8 For new ideas new suffixes have been devised.**

They originate in genuine words, whose first part is clipped off, allowing only one or two syllables to remain. Of the two syllables, the first is usually a vowel which coalesces naturally with a preceding vowel and constitutes a well-knit whole.

-आतु ॥ -आत् ॥ -आत् ॥ -आत् is abridged from धातु ॥ धात् ॥ धात् ॥ धात् 'metal'. It is used as a suffix in forming the names of metals. Cf. English -ium, -um.

-आति ॥ -आति ॥ -आति ॥ -आति is abridged from वाति ॥ वाति ॥ वाति ॥ वाति 'gas'. It is used as a suffix in forming the names of gases. Cf. Eng. -on.

-ला ॥ -ला ॥ -ला ॥ -ला is abridged from विरला (मृद्) ॥ विरला (मृद्) ॥ विरला (मृद्) ॥ विरला (मृद्) 'rare (earth)'. It is used as a suffix in forming the names of rare earth metals (atomic nos. 39, 57-60, 62, 64-71).

**9 In case of ideas and objects that have existed from ancient times, old names are assiduously hunted out from the vast range of Sanskrit, Pali and Prakrit literatures. Modern Indian languages are also consulted.**

**10 The initial syllable of an element name stands as its symbol. All symbols have to be distinct. Hence every element name begins with a different syllable.**

